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IN THE CLAIMS**Claims:**

1-9 (canceled)

10. (currently amended) A process for heat recovery in the production of 1,2-dichloroethane from chlorine and ethene by direct chlorination, wherein the vaporous 1,2-dichloroethane obtained from a direct chlorination reactor is compressed without phase change and then fed to heat exchangers for heat recovery.

11. (previously presented) A process according to claim 10, wherein the compressed 1,2-dichloroethane is fed to an evaporator of a light ends dehydration column and/or to an evaporator of a heavy ends column and/or to an evaporator of a vacuum column and/or to a chlorine heater upstream of a direct chlorination reactor.

12. (previously presented) A process according to claim 10 wherein the dehydration column for purifying 1,2-dichloroethane, which is operated at a head pressure of 1.0 to 1.6 bars abs., is heated by providing a heat exchange between the bottom product and the compressed vapors from the direct chlorination reactor at a temperature difference of 8 and 25°C, the bottom temperature being maintained in the range of 80 to 105°C by an adequate bottom discharge stream.

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13. (previously presented) A process according to claim 10, wherein the heavy ends column for purifying 1,2-dichloroethane, which is operated at a head pressure of 0.7 to 1.4 bars abs., is heated by providing a heat exchange between the bottom product and the compressed vapors from the dehydration column at a temperature difference of 8 and 25°C, the bottom temperature being maintained in the range of 84 to 105°C by an adequate bottom discharge stream.

14. (previously presented) A process according to claim 10, wherein the vacuum column used for purifying the bottom discharge stream from the heavy ends column and operated at a head pressure of 0.2 to 0.3 bars abs. is heated by providing a heat exchange between the bottom product and the compressed vapours from the direct chlorination reactor at a temperature difference of 8 and 25°C, the bottom temperature being maintained in the range of 80 to 90°C by an adequate bottom discharge stream.

15. (previously presented) A process according to claim 10, wherein liquid chlorine used for direct chlorination is evaporated and superheated by heat exchange with the compressed vapors from the direct chlorination reactor or by heat exchange with circulated liquid 1,2-dichloroethane from the direct chlorination reactor.

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16. (previously presented) A facility for running the process according to claim 10, wherein a turbo-compressor is used to compress the vaporous 1,2-dichloroethane withdrawn from the direct chlorination reactor.

17. (previously presented) A facility according to claim 16, wherein the turbo-compressor is equipped with a tandem type shaft seal and in that a device is provided for supplying said shaft seal with nitrogen as barrier gas.

18. (previously presented) A facility according to claim 16, wherein a speed controller is provided to adjust the delivery rate of the turbo-compressor to the discharge rate of the direct chlorination reactor.

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